

WaterReuse Foundation: Advancing the Science of Water Recycling

Presented to:
DWR Task Force on Water Recycling
Anaheim, CA
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Presented by:
Ron Young
President
WaterReuse Foundation

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WaterReuse Foundation

- Founded in 1993 to:
 - Develop the Science & Technology Necessary to Support the Water Recycling Needs of the 21st Century

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WaterReuse Foundation

- Governed by a 9-Person Board
- Board Recently Voted to:
 - Revise & Streamline Research Business Plan;
 - Expand Research Committee to 20 Prominent Professionals from academia, government, utilities, consulting communities
- Revised Research Plan will be Published on Web Site Shortly
 - www.WaterReuse.org
- Employ Full-Time Research Director

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WaterReuse Foundation

- Funded by USBR, CA State Water Resources Control Board, Subscribers
- Focused Exclusively on Reuse Research
- 2003 Budget will Exceed \$2 million
- Received \$1.05 Million from USBR on September 30
- Slated to Receive an Additional \$2MM from USBR/Congress in FY-03

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WRF's 11 Research Priority Categories

- Microbial Risk Assessment Methodologies
- Identify Reuse Criteria Protective of Public Health & Enable Flexibility & Efficient Use of Technologies
- Understanding Pathogen Inactivation Relationship & Performance Parameters for Treatment Processes
- Develop Program to Communicate Levels of Safety to Public/Polymakers
- Water Quality Standards for Chemical Constituents
- Establish Basis for Demonstrating Equivalent Treatment w/Alternative Processes for Pathogen Removal/Inactivation

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Research Priorities Categories (cont'd)

- Ensure Recycled Water is Microbiologically Safe
- Maintain WQ in Reclaimed Water Storage & Distribution Systems
- Standardize Protocols for Field Testing of Recycling Equipment & Practices
- Monitoring Strategies to Verify Treatment/Disinfection Reliability
- Salinity Impact, Source Control, and Treatment Studies

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Research Contract Awards -- 2002

- Investigate Effectiveness of Treatment Technologies to Destroy/Remove NDMA (Malcolm Pirnie)
 - Subcontract to UC-Berkeley (\$120,000)
- Develop Analytical Methods for NDMA (City of Long Beach)
 - Subcontract to UCLA (\$72,500)

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Research Contract Awards -- 2002

- *Understanding Public Concerns & Developing Tools to Assist Local Officials in Planning Successful Potable Reuse Projects* (Resource Trends, Inc.)
- Rejection of Wastewater-Derived Micropollutants in High-Pressure Membrane Applications Leading to Potable Reuse (CO School of Mines)

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Research Awards Pending

- Optimization of Filtration Flux Rate for Production of Title 22 Disinfected Tertiary Recycled Water (Monterey Regional Water Pollution Control Agency)
- NDMA Fate & Transport
 - Foundation's First Tailored Collaboration Project
 - Six Large CA Utilities Contributing \$40,000 Each
 - West Basin is Leading Research

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WRF Research Agenda -2002

- The Use of Bioassays/Chemical Measurements to Assess Removal of Endocrine Disrupting Compounds in Water Recycling (JWRTF)
- Assessment of the Environmental Fate of Selected Pharmaceuticals in Water Recycling (JWRTF)
- WRF, AwwaRF, WERF, NWRI, & CUWA Investing \$525,000 in these two Projects

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New and Pending Projects for 2002-2003

- Develop National Salinity Management Clearinghouse & Five-Year Research Program
- Assessing Methods for Achieving Brine Concentrate Disposal
 - a JWRTF Project
 - USBR Provided \$250,000 in Funding
- Investigating Microbial Risk of Irrigating Crops with Recycled Water
- Support for Comparative Study of Recycled Water Irrigation of Fairway Turf

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Projects for 2002-2003 (con't)

- Priority Projects Identified at June 2002 Foundation Conference:
 - Pathogen removal in reclamation plants (Sequel to Pomona Virus Study)
 - Developing Molecular Methods for Meaningful Detection of Pathogens
 - Salinity Management at Source
 - Effects of Non-Potable Water in Groundwater
 - Marketing Strategies for Recycled Water
 - Economic Analysis of Sustainable Water Use (Benefits and Costs)
 - Surrogate for measurement of Health Significant Organic Removal
 - Occurrence of Emerging Contaminants in Recycled Water

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Projects for 2002-2003 (con't)

- "Tailored Collaboration" Projects with Southwest Florida Water Management District
 - Water Quality Study of Surface and Groundwaters in the Tampa Bay Area Not Influenced by Municipal Wastewater or Reclaimed Water Flows
 - Effective Attenuation of Biological and Chemical Constituents in Reclaimed Water Using UV and RO Treatment

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Creation of National Data Base

- On January 1, Foundation will Initiate Development of a *National Data Base of Water Reuse Facilities*
- Probable Funding Partners Include:
 - SWRCB;
 - EPA's Office of Wastewater Management;
 - USBR
- Association will Maintain, Update Data Base
- Project will Yield Tremendous Benefits to Water Reuse Community

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Relationships & Leveraging

- WRF is Secretariat for Joint Water Reuse Task Force
- Other Members are:
 - AwwaRF
 - WERF
 - NWRI
 - USBR

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Relationships & Leveraging

- WRF is Founding Member of Global Water Research Coalition (GWRC)
- GWRC Consists of 12 national water research organizations in U.S., UK, Netherlands, Germany, France, S. Africa, & Australia
- Primary Objectives of GWRC are to:
 - Leverage Human Capital;
 - Leverage Financial Resources; and
 - Reduce or Eliminate Duplication of Effort

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New Relationship & Leveraging

- Currently Exploring Potential for Multi-Year Joint Research Effort with the Southwest Florida Water Management District (SWFWMD)
- Foundation and SWFWMD Would Co-Fund Projects 50:50
- Relationship will be Initiated in 2003 by Co-Funding two Tailored Collaboration Projects Related to Indirect Potable Reuse

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Leveraging Resources

- Over Past Two Years, for Every Federal or State \$ Expended, Foundation Obtained \$2.55 from Other Sources
- Goal in 2003 will be to Leverage 3:1
- 25 Cents Invested by SWRCB in WRF Will buy \$1 in Research

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Examples of Leveraging

- AwwaRF has Contributed \$75K to *Understanding Public Concerns...* Project
- Six CA Utilities (West Basin, LACSD, San Jose, Santa Clara, OCWD, Irvine Ranch) will Contribute \$40K Each to NDMA Fate & Transport Project
- WRF's \$100K Bought \$525K in Research on JWRTF EDC/PhACs Projects
- SWFWMD will Contribute \$400K to Two Research Projects

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WRF Outlook

- By Early 2003, WRF will have 16 Active Research Projects
- Currently Instituting a Subscriber Fee Structure
- Plan to Expand Board from 9 to 11
- Will Expand, Strengthen Research Committee and Process in early 2003
- Expect Continued Growth in 2003

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Some Current Goals

- To Continue to Serve the Recycling Research Needs of California & the Nation
- To Continue -- along with NWRI, AwwaRF, and WERF -- to be the Primary Vehicles for Water Reuse Research
- To Assist SWRCB/DWR by Planning & Organizing Workshop to Identify Long-Term Water Recycling Research Needs
- To Develop Data Base that will Facilitate Tracking, Measurement of Success of Water Recycling Projects in CA & Nation

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Relationship of Research to Task Force's Mission

- Task Force's Mission is to Reduce Barriers to Reuse
- One of Major Barriers to Increased Water Recycling is Lack of Public Acceptance
- Research Leads to Increased Public Acceptance

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Importance of Reuse Research

- To Convince the Public that Recycled Water is Safe
- To Ensure Microbial and Chemical Safety
- To Develop Solutions to Critical Problems (e.g., Salinity Management)
- To Improve Technologies (e.g., Reverse Osmosis)
- To Facilitate Marketing of Recycled Water

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